

**Microsemi Corp.**  
The diode experts

SANTA ANA, CA  
For more information call:  
(714) 979-8220

SCOTTSDALE, AZ

**1N962B  
thru  
1N973B  
DO-35**



**FEATURES**

- 6.8 TO 200V ZENER VOLTAGE RANGE
- AVAILABLE IN JAN, JANTX AND JANTXV AND JANS QUALIFICATIONS TO MIL-S-19500/117
- METALLURGICALLY BONDED VOIDLESS DEVICE TYPES
- CONSULT FACTORY FOR VOLTAGES ABOVE 200V

**MAXIMUM RATINGS**

Steady State Power Dissipation: 400 mW  
Operating and Storage Temperature: -65°C to +175°C  
Derating Factor Above 75°C: 4.0 mW/°C  
Forward Voltage @ 200 mA: 1.5 Volts

**\* ELECTRICAL CHARACTERISTICS @ 25°C**

JEDEC TYPE NUMBER (Note 1)	NOMINAL ZENER VOLTAGE (Note 2) Vz		MAX. ZENER IMPEDANCE (Note 3)			MAX. DC ZENER CURRENT (Note 4) IzW		MAX. SURGE CURRENT (RECURRENT) (Note 5) Iz (SURGE)		MAX. REVERSE LEAKAGE CURRENT		MAX. TEMP. COEFFICIENT CzW
	VOLTS	mA	Zz @ Iz1 OHMS	Zz @ Iz2 OHMS	mA	mA	mA	µA	VOLTS	%/°C		
1N962B	11	11.5	9.5	700	25	32	175	5	8.4	+0.076		
1N963B	12	10.5	11.5	700	25	31	160	5	9.1	+0.077		
1N964B	13	9.5	13.0	700	25	28	150	5	9.9	+0.079		
1N965B	15	8.5	16	700	25	25	130	5	11.4	+0.082		
1N966B	16	7.8	17	700	25	24	120	5	12.2	+0.083		
1N967B	18	7.0	21	750	25	20	110	5	13.7	+0.085		
1N968B	20	6.2	25	750	25	18	100	5	15.2	+0.086		
1N969B	22	5.6	29	750	25	16	90	5	16.7	+0.087		
1N970B	24	5.2	33	750	25	15	80	5	18.2	+0.088		
1N971B	27	4.6	41	750	25	13	70	5	20.6	+0.090		
1N972B	30	4.2	49	1000	25	12	65	5	22.8	+0.091		
1N973B	33	3.8	58	1000	25	11	60	5	25.1	+0.092		

\*JEDEC Registered Data

**SILICON  
400 mW  
ZENER DIODES**

1

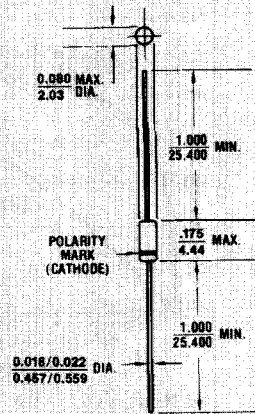


FIGURE 1

All dimensions in INCH  
m.m.

**MECHANICAL CHARACTERISTICS**

CASE: Hermetically sealed glass case. DO-35.

FINISH: All external surfaces are corrosion resistant and leads solderable.

THERMAL RESISTANCE: 200°C/W (Typical) junction to lead at 0.375-inches from body. Metallurgically bonded DO-35's exhibit less than 100°C/W at zero distance from body.

POLARITY: Diode to be operated with the banded end positive with respect to the opposite end.

WEIGHT: 0.2 grams.

MOUNTING POSITION: Any.

# 1N962B thru 1N973B DO-35

**NOTE 1** The JEDEC type numbers shown (B suffix) have a  $\pm 5\%$  tolerance on nominal zener voltage. The suffix A is used to identify  $\pm 10\%$  tolerance; suffix C is used to identify  $\pm 2\%$ ; and suffix D is used to identify  $\pm 1\%$  tolerance; no suffix indicates  $\pm 20\%$  tolerance.

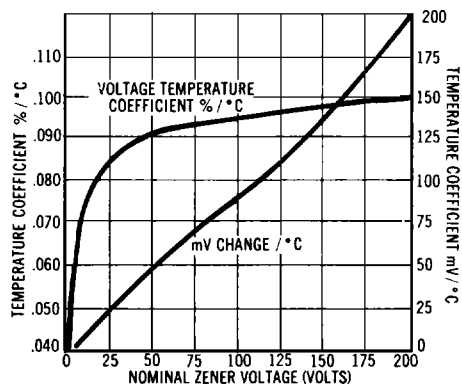
**NOTE 2** Zener voltage ( $V_Z$ ) is measured after the test current has been applied for  $20 \pm 5$  seconds. The device shall be suspended by its leads with the inside edge of the mounting clips between .375" and .500" from the body. Mounting clips shall be maintained at a temperature of  $25 +8/-2^\circ\text{C}$ .

**NOTE 3** The zener impedance is derived from the 60 cycle A.C. voltage, which results when an A.C. current

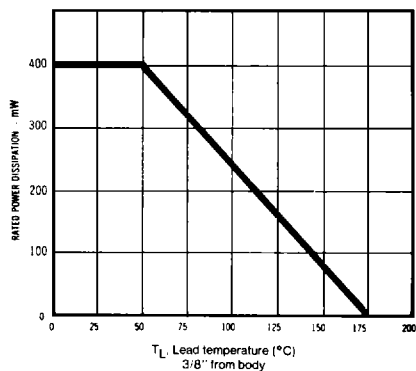
having an R.M.S. value equal to 10% of the D.C. zener current ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed on  $I_{ZT}$  or  $I_{ZK}$ . Zener impedance is measured at 2 points to insure a sharp knee on the breakdown curve and to eliminate unstable units.

**NOTE 4** The values of  $I_{ZM}$  are calculated for a  $\pm 5\%$  tolerance on nominal zener voltage. Allowance has been made for the rise in zener voltage above  $V_{ZT}$  which results from zener impedance and the increase in junction temperature as power dissipation approaches 400 mW. In the case of individual diodes  $I_{ZM}$  is that value of current which results in a dissipation of 400 mW at  $50^\circ\text{C}$  lead temperature at  $3/8"$  from body.

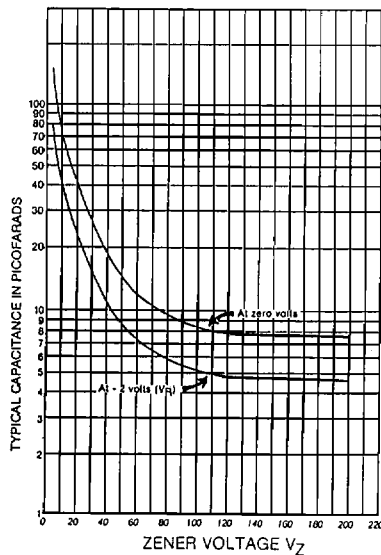
**NOTE 5** Surge is 1/2 square wave or equivalent sine wave pulse of 1/120 sec. duration.



**FIGURE 2**  
ZENER VOLTAGE TEMPERATURE  
COEFF. vs. ZENER VOLTAGE



**FIGURE 3**  
POWER DERATING CURVE



**FIGURE 4**  
CAPACITANCE VS. ZENER VOLTAGE  
(TYPICAL)